

DETAILED ACTION

This Office Action is to replace the previous Office Action mailed on 10/20/08.

In view of the arguments (07/15/2008) set forth by Applicant in the Appeal Brief,
PROSECUTION IS HEREBY REOPENED.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below: _____

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 6 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/17806A1 [hereinafter WO] in view of Aubel et al. (U.S. 6921197) [hereinafter Aubel].

WO suggests to monitor a flat/ deflated tire and teaches to position a temperature sensor in each tire and monitor an atmospheric temperature and rate of change of temperature in each tire and compare it with a predetermined value/ statistical limit/ previously determined trouble state temperature (previously determined rate of change of temperature/ previously set limit) in order to determine flat tire. WO determines first time temperature derivative and second derivative. WO suggests reinforcing the tires. WO states that it is important for a driver, when it drives a car with a deflated tire to know if the driver could drive more and for how long rather than staying on a side road and repairing the tire.

Although, this might imply that the driver wants to know the end life of the tire as function of the temperature, WO does not explicitly state that the predetermined data is a previously obtained data stored in the memory. WO does not explicitly teach to determine a time predicted to reach a limit temperature/ threshold temperature/ predetermined temperature (temperature corresponding to end life).

Aubel discloses the device in the field of applicant's endeavor. Aubel teaches to embed a temperature sensor in a tire and evaluate the tire condition with respect to runable time and integral of output temperature signal, the integral is indicative a wear signal, wherein when the integral is exceeding a threshold level, the device indicates a wear (thus, residual lifetime is judged) signal for the tire. This could indicate a flat tire, and a pressure control turns an air pump.

Aubel discloses a device/ method/ process of judging in the field of applicant's endeavor comprising detection units arranged in each tire capable of measuring temperature of the tire and determining with respect to time (integrating) when the wear (residual lifetime) or the tire exceeds a threshold (statistically set temperature or the temperature set from the test stand), wherein the tire pressure control decides to inflate (increase pressure) the tire (thus, deciding that

Art Unit: 2855

the tire is flat which is judged based on the measured temperature). The measured temperature is a temperature inside the tire. The device also predicts the wear (time). Aubel states that the sides of the tire are more likely susceptible to wear. Also the tire damage can be detected (entire col. 5). Aubel states that the too high temperature can be indication of too low pressure (flat tire). Please note: by knowing time/temperature integral, the time corresponding to a desired temperature, and thus, time to reach the desired (limit/ threshold/ predetermined) temperature can be determined.

For claims 12-13: the device has an evaluation unit/ microprocessor/ computer comprising a storage device/ memory (col. 6, lines 20-28, col. 7, lines 35-37).

In addition, Aubel states that the temperature is also an indication that the tire has been driven for a long period of time (continuously) at a low pressure (col. 5, lines 33-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device/ method disclosed by WO so as to clearly judge the residual life of the tire with respect to the flat tire and by determining a time when the temperature is a threshold/ limit temperature, as taught by Aubel, in order to allow the operator to know for how long he/ she can run the tire/ vehicle.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/17806A1 [hereinafter WO] and Aubel, as applied to claims 1-2, 6 and 12-13 above, and further in view of Tanaka Masatoshi (U.S. 6701986).

WO and Abel disclose the device/ method as stated above.

They do not teach to reinforce tire with a reinforcing rubber.

Masatoshi Tanaka states that it is very well known in the art to reinforce tires with rubber layer in order to prolong their life.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the tire, disclosed by WO and Abel, with reinforcing rubber, as

Art Unit: 2855

taught by Masatoshi Tanaka, in order to prolong the tire life and provide the operator with the tire behavior when it is reinforced, in order to predict life of already reinforced tire.

Allowable Subject matter

4. Claims 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments, filed 07/15/2008 have been fully considered and they are not persuasive. However, for clarity of the record for the appeal, the Examiner repeats the previous rejection including more explanations.

Applicant states that Aubel does not teach to determine/ calculate **time predicted to reach a limit temperature**.

This argument is not persuasive because Aubel teaches to calculate/ determine a time temperature integral/ change in temperature with time and comparison of data with a predetermined/ threshold data to determine **wear signal which is inherently indicative of residual life of the tire. This would mean that the time and temperature at each point could be determined, including a point when the temperature is equal to a threshold/ limit temperature.**

Aubel teaches: "permits a brief monitoring of the state of the tire by producing a warning signal if a predetermined/ limit temperature exceeded, and which permits a long term monitoring of the tire, by detecting the temperature stressing of the tire as a **time behavior** and determine, for example, a time integral of the temperature that is a measure for the tire damage, can be utilized

Art Unit: 2855

in a vehicle by itself. When used in the vehicle itself, the evaluation unit is advantageously integrated into a dashboard or other on-board computer and produces, for example, a warning signal if the tire shoulder temperature is too high as an indication of an air pressure that is too low and/or produces some other warning signal if the tire has, for example during a period of operation, been driven for an impermissively long period of time at a low tire pressure and can therefore be damaged”.

Applicant states that Aubel fails to perform any time predictions. Once again: This argument is not persuasive because by definition a temperature integral over time is a measure for temperature change and its limit value and, thus prediction (function) when it is compared with a threshold value.

Please note that a combination of steps of determining time-temperature integral and comparison it with the threshold is indicative of determining/ predicting time to reach the limit/ threshold temperature.

With respect to claim 11: Applicant states that Tanaka is not applicable because Tanaka is not related to time and temperature. This argument is not persuasive because in the rejection on the merits, the Examiner uses Tanaka only as a secondary reference for its teaching that that tire could be reinforced. The primary reference, WO and Aubel, teach time and temperature, therefore, the combination of the three references teaches all the limitations of claim 11.

With respect to Nowicki: the arguments are now moot, since the rejection is withdrawn.

Conclusion

Art Unit: 2855

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Tsujimoto (U.S. 5911094) teaches that based on estimated temperature, the time which elapses until the prescribed temperature is reached, could be predicted.

Kyrtsos et al. (U.S. 6712133) teaches that time needed to reach the desired/ limit temperature could be determined.

Conlon et al. (U.S. 6136607) teaches that temperature corresponding to time-to-failure could be determined.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GKV

*Gail Verbitsky
Primary Patent Examiner, TC 2800*

September 29, 2008/ December 01, 2008

/Gail Verbitsky/

Application/Control Number: 10/524,262

Page 8

Art Unit: 2855

Primary Examiner, Art Unit 2855